to the stars, playing Commander Adama in the science-fiction television series *Battlestar Galactica* in the late 1970s.)

Although essentially no readers will be able to connect their own observations of the objects mentioned in the book with their scientific descriptions, the format nonetheless thus bridges the gap between amateur astronomy on the one hand and astrophysics on the other; the latter is presented non-technically but clearly and without loss of accuracy. The book also contains many footnotes providing tangential information. Somewhat odd is the reference format (for the handful of citations per chapter): title, author, year (*i.e.*, no journal or other information). While that is probably enough to track them down, full references and/or DOIs would have taken up negligible additional space.

Apart from the twenty-four chapters and the reference list, the book contains essentially only a page of acknowledgements and an introduction. In addition to the finding charts (with the figures represented by the constellations as grey backgrounds), there are a few other black-and-white diagrams and photos spread throughout the book as well as occasional 'boxes' with additional information. As usual, the editing could have been somewhat better, though there are only a few actual typos.

Using specific celestial objects as jumping-off points to discuss various astrophysical topics in more general terms is also the strategy used in another book[7] reviewed in this *Magazine*[8], although that book, fitting for one on galaxies, contains many large, high-resolution colour photos. That doesn't make sense for a book mostly about stars, though the idea of moving from what one sees in the sky to the physics behind it is the same. This could be a good first book on (mainly stellar) astrophysics for someone interested in astronomy. — Phillip Helbig.

References

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An Introduction to Mathematical Astrophysics, by Neil R. Taylor (Observatoire Solaire), 2024. Pp. 317, 27 × 19 cm. Price £37 (on Amazon), £35 (directly) (hardbound; ISBN 978 1 9999044 2 5).

This book is intended for students with A-Level mathematics and physics, first- and second-year undergraduates in physics and astronomy, and amateur astronomers. In a little over 300 pages, it covers a vast amount of material, from history, through Solar System and dynamical astronomy, stellar astrophysics, the Galaxy, galaxies, cosmology, Special and General Relativity, and just about everything you want to know about astronomy. The author obviously has a huge comprehensive knowledge of the subject — but how successful is he in putting it over for the intended readership?

Unfortunately, it appears to have been privately published and printed, and has doubtless never been through the hands of a copy editor. While, like the curate's egg, it may be good in parts, I think I can safely say that I have never seen a book so riddled with mistakes on page after page from start to finish. These include mistakes in science, in mathematics, grammar, spelling, punctuation, and sentence structure, as well as the appallingly poor typesetting of mathematical symbols and equations to such an extent that I cannot honestly say that I recommend the book to anyone who is trying to learn from it.

To list all the mistakes would probably take up an entire issue of *The Observatory,* so I'll just choose a random few. Among the more amusing spelling mistakes are Harlow Shapely and discreet energy levels. As for punctuation, Lynne Truss (of *Eats, Shoots and Leaves* fame) would have a field day, with a vast mine of mistakes to choose from. Suffice it to say that the author seems to have no idea whatever of the use of apostrophes, commas, or hyphens. Among the many scientific mistakes, we are told that hadrons are mesons and muons, that a pion is the lightest of the muons, protons and neutrons are bosons, and electrons are baryons. We are also told that a black body absorbs no radiation. Cool objects don't emit any radiation below a threshold (a falsity obviously caused by a misinterpretation of the Planck curves illustrated just below it). In the Sun's spectrum, the atomic hydrogen emissions are a very distinct case and "shine-out" as bright lines against the backdrop of the continuum spectra. Type Ia supernovae emit silica lines. Faraday showed that magnets move within an electrical conductor. The pressure of a gas is not a scalar nor a vector, but a tensor. (Spectroscopy shows that) the coma of a comet consists predominately [*sic*] of (atomic) hydrogen. In neutron stars, electrons are accelerated by magnetic fields. You may remember from school physics that blue light is refracted less that red light. (Gosh — I'd forgotten. I thought my teacher said "more than" — did he get it wrong?). This is why our sky is blue. The atomic mass of helium is 2. (The author also confuses atomic weight with mass number, and tells us that the atomic weight must be written to the lower right of an element's symbol.) A globular cluster has lots of high-metallicity stars. Fe^{13+} is atomic iron with 13 of its 16 electrons missing. Methane, water, and carbon dioxide are diatomic elements. And so it goes on and on.

I'll give an example of just one mathematical derivation. We'll calculate the angular momentum of a solid rotating star. (I'm not sure what a solid star is.) The angular momentum of a closed system is $Smvr$. (We are not told what a closed system is or what the symbols stand for.) If we consider the scenario of a solid rotating star, we can integrate over the whole star and arrive at the angular momentum of the star as MRv, where M is the mass of the star, R its radius, and v the speed of rotation. Such is the quality of the mathematical derivation — and, of course, the wrong result. For a solid sphere of uniform density, the angular momentum would be only 40 percent of this. For a real, gaseous star, its angular momentum is nothing at all like this.

I think I have written enough. A brief summary, I'm afraid, is that I cannot recommend this one to those trying to learn mathematical astrophysics. — JEREMY B. TATUM.

The Enchantement of Urania: 25 Centuries of Exploration of the Sky, by Massimo Capaccioli (World Scientific), 2024. Pp. 573, 23·7 × 15·7 cm. Price £135 (hardbound; ISBN 978 981 124 777 4).

Massimo Capaccioli climbed five rungs of the academic ladder at the University of Padua from 1969 until 1990, becoming full professor, then moved to the University of Naples as full professor in 1995 (where he was also director of the observatory 1993–2005), becoming an emeritus towards the end of 2014. He was also a visiting professor at the University of Texas and counts Gérard